School of Life Sciences

Postdoctoral Research Assistant in Coarse-Grained Modelling of Kinetochore-Microtubule Interaction at the University of Dundee, UK

Computational Biology / Molecular, Cell and Developmental Biology
Full Time / Fixed Term until November 2026
Salary: £36,024 - £40,521

The School of Life Sciences at the University of Dundee is a world-class academic institution with a reputation for the excellence of its research, its high-quality teaching and student experience, and the strong impact of its activities outside academia. With 900 staff from over 60 countries worldwide, the School provides a dynamic, multi-national, collegiate and diverse environment with state-of-the-art laboratory, technology and teaching facilities.

We are recruiting for an exceptional individual to join us as a Postdoctoral Research Associate (PDRA) within our Divisions of Computational Biology / Molecular, Cell and Developmental Biology, to develop Coarse-Grained Modelling of Kinetochore-Microtubule Interaction.

We are seeking a full-time PDRA to work on the interdisciplinary project of coarse-grained modelling of the kinetochore-microtubule interaction. The kinetochore is a large structure that anchors microtubules to chromosome centromeres, enabling them to be pulled apart during the segregation phase of cell mitosis. Each kinetochore is too large to simulate with atomistic resolution; thus, the aim of this project is to build and analyse coarse-grained models of a kinetochore and how it interacts with the microtubules it is attached to. Understanding the biomechanics of this interaction is crucial, as mistakes in the process lead to the improper splitting of chromosomes and result in non-viable daughter cells.

The successful candidate will work closely with the experimental labs of Prof. Tomoyuki Tanaka, a leading expert in studying mechanisms of chromosome segregation in mitosis, chromosome organisation in the nucleus, and how errors in these processes lead to diseases; and Prof. Rastko Sknepnek, a computational biophysicist with extensive expertise in modelling soft matter and biophysical processes. Both groups are located in the same building complex, allowing for close and frequent interactions. The candidate will be primarily working on the computational side of the project but will be expected to closely interact with the experimental part of the team.

We seek a highly motivated candidate with a background in physics, chemical engineering, materials science, applied mathematics, or a closely related field, who is willing to work in a highly interdisciplinary environment and closely collaborate with a wet lab.

Experience with molecular dynamics, strong programming skills in Python, and expertise in using high-performance computing facilities are essential. Familiarity with coarse-grained modelling and molecular dynamics packages such as LAMMPS and HOOMD-Blue is a plus.

This post will be offered on a fixed-term contract until November 2026. The salary level will be £36,024 – £40,521 (Grade 7, spines 29-33), depending on the research experience.

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We are one of the UK's leading universities – internationally recognised for our expertise across a range of disciplines and research breakthroughs in multiple areas, including science, medicine and engineering, amongst many others. Conveniently located on the banks of River Tay, our main city-centre campus is at the heart of Dundee - an up-and-coming, friendly, compact and affordable city with a rich heritage in design and technology. Just a short walk from the V&A Museum of Design Dundee, we're close to both the train and bus stations.

For further information about this position, please contact Rastko Sknepnek (r.sknepnek@dundee.ac.uk) and Tomo Tanaka (t.tanaka@dundee.ac.uk).

The diversity of our staff and students helps to make the University of Dundee one of the top universities in the UK. Family friendly policies, staff support networks for BME and LGBT staff, membership of Athena Swan and Stonewall, as well a full range of disability services, create an enjoyable and inclusive place to work.